BYTE BANDITS
OF AMERICA

NEWSLETTER SEPTEMBER 1987

TRS-80 NEWS:

The Club obtained some Mod. III-IV Programs this month. They are "Success With Math - Grades 1 - 9" and "Orchestra 90". We also were given an expansion bay with two 8" drives by Kathy BERRYHILL.

TANDY CATALOGS:

The latest and newest 1988 Tandy Catalogs are here at the meeting place. The latest new machines are described, as well as a Software Catalog Listing. Look them over and you will notice some great Mod. I & III deals. We also have a good supply of 1987 Catalogs too.

BBS SYSTEM:

It's back on line again, and I'm monitoring it closely. Should you call it, log on and go to (M) Messages in the TRS-80 Section and then find the Tandy World in the Main Menu (A). There is a Files Upload-Download in the message base for the TRS-80's. CAUTION - The BBS is a nationwide network system so it isn't the easiest to use. Come to the Club Meeting and practice, if you need experienced help.

80286 UPGRADE:

Those of you who presently own an M1000 - M1000SX machine can obtain an accessory 80286 Board which will replace their present 8088 Processor, and this will give their machines more speed.

MODEL 4D:

The Model 4D remains on at the same price with all of Radio Shack's support. We support all phases of the Model 4. It must be good to keep pace in this fast moving MS-PCDOS competition.

PRINT - COMMANDER:

Yes, now you can convert your older printers to IBM print codes (characters and font) for your PC-XT-AT or compatables. This $39.95 memory resident program will make your old print machine usable again. Call 1-713/652-1732. There is still hope for the "Gorilla Banana" printer. The Program "Print-Commander" has a 30 day unconditional guarantee.

G BASIC PATCH:

Micro Labs hi-res board and G BASIC 2.0 won't merge with the new version of LDOS 5.3 BASIC because the New Version is 391 bytes larger. If you need this fix, check out the "80 MICRO" Sept. '87 issue, Pg. 22.

MONITOR RESOLUTIONS:

What is meant by EGA CGA VGA MCGA etc? Well, that all equates to the amount of cash your MSDOS Monitor and Card will cost. Really, the prettier the picture, the more the monitor will cost. It also is the stepping stones of technology in computer Video Systems.

CGA This is called Color Graphics Adaptor - it allows 640 by 200 dot resolution. This is the normal "cheap" Color System.

EGA This is called Enhanced Graphics Adaptor - it gives a better Graphics Mode (640 by 350 dot) resolution. This is the better one to have on your MSDOS Computers. It gives good clarity in text and graphics on your monitor.

VGA This is called Video Graphics Array. This produces 640 by 480 pixel resolution and lets you display 256 simultaneous colors, but at a lower resolution of 320 by 200 pixels with the pallette of 16-64 colors.

MCGA This is called MultiColor Graphics Array. It is the newest in Monitor System Cards. It offers CGA Resolution which limits its usage, but accepts most Monitors of 15-35 Mhz.

There are also a varity of boards with a combination of Accessory items on the Market. Your adaptor board dictates which Monitor to buy. The cost can kill your shopping budget quickly. Choose which Monitor and Adaptor Board by your need, not your desires.

M2000 DEVOTEES:

The following company offers several hardware options for the 2000. Ask about their trade-in Policy for Memory-Expansion.

ENVISION DESIGNS
1909 Orchard Way
Richland, WA. 99352
Tp: 509/627-5291

NEW PROGRAMS	R/S #
Mod. 1-3-4	
K-8 Math Program	26-1715
Alpha Key	-1718
Essential Math Program	-1716
Investigations in Integral Calculus	-2600
Numeric Data Entry Practice	-2601
Computer Discovery Junior High	-2630
C.A.R.D.I. Sentences	-2603
Agri Star	-2227
Payroll	-1543
Inventory Control	-1545
PFS Report	-1516
Accounts Payable	-1542
W-2 Writer	-1539
Dow Jones Market Analyzer	-1606
Model 100	
Bar Code Drivers	26-3846
Investment Analysis	-3824
Model 12-16-6000	
Formations Management System	26-4528
TRS-XENIX Operations Guide	-----
Sales Analysis	-4608
XENIX 3.0 Demo Kit	-----
DMP 2100 P Custom Font System	-----
Profile Lookup	-4559
Medical Office System	-4508
Scripsit 16 01.01.00	-----
Order Entry/Inventory Control	-6207
Scripsit Thinline Floppy/Hard Disk Ref	-----
The Precedent Legal Accounting System	-4620
Model 2	
Statistical Analysis	26-4540
WestLaw	-4560
Mfg. Inventory System	-4509
Reformatter	-4714
Versafile	-4510
Visicalc	-4511
TRS DOS 1.2	-----
TRS DOS Ref. Manual	-----
Order Entry	-4514
Menu Generator	-4555
Profile II	-4512
II Technical Ref. Manual	-4921
Hi Tech Business Graphics User Guide	-----
Order Entry/Inventory Control	-4607
Editor Assembler	-4707

Profile Prosort	26-4558
Profile Archive	-4557
Job Costing	-4513
Cobol Development System	-4703
Personal Search	-4621
Litigation Support	-4545
Visicalc Business Forcasting System	-4526
Fortran	-4701
Inventory Control System Hard Disk	-4802
Inventory Control System Multi Drive	-4602
General Ledger R/S Cobol 1981	-4601
General Ledger 1.1	-4501
Text Editor	-4710
Mailing List	-4506
Accounts Payable	-4605
Profile II	-4512
Bi Sync Communications	-4716
Electronic Broker	-4525
Inventory Management	-4502
Accounts Payable	-4505
Accounts Receiveable	-4604

Model 2000

MSDOS/Basic 2.11.02	700-2602

Model 1200

Tandy 1200 Hard Disk Word Star Drivers

TANDY'S UNIVERSAL KEYBOARD ADAPTOR:

Enhanced Keyboard and Centronics Boards are useable on the Tandy 1000 using Adaptor #25-1030. It comes with Software Drivers. $99.95. Also available for the M 3000 - M 1200 Computers (#25-4038) $99.99 Keyboard. It is compatible with the PC-XT-AT, AT&T, and M 1000 Computers.

BOOKS:

The Club has on order a book that will help make sense of the Hard Disk System. It should arrive in 6 weeks or less. It is called "Hard Disk Management". By the way, the Club has a lot of books on loan, and some are way OVERDUE! Bring them back (or Mail them) - PLEEZE! We have others waiting to check them out!!'

NEW PROGRAMS:

We have again been blessed by our Local Computer Center. I received about 30 - 40 new Programs from the store on S. Bascom Ave. Please stop in and say "Thank You" if your'e in their area. The listing is attached to this Newsletter. I heard say that the Computer Center in Mountain View trashed all their stuff instead of giving it to our Computer Club! I would request that you refrain from getting Service or Help from that S.O.b. He can be eliminated if you direct your Sales to the Computer Center on S. Bascom Ave. in San Jose. It is the least we can do to express our Thanks for the Free Programs we received from the S. Bascom Ave. Computer Center.

"Several systems are UNIX derivatives that share a common syntax and many of the same commands"

manner, but provides only limited support for network management. As the demand for networking has increased, many suppliers have implemented their own flavors of networking—resulting in a variety of incompatibilities at this level.

Nevertheless, UNIX standardization has lead to a significant degree of portability for multi-user systems. Time will tell whether or not similar advances can be made for real-time systems.

Space does not permit the review of many other influential operating systems (i.e., CP/M, RT-II, PICK, AUX, VMS, NOS, REGULUS), and only allows for covering the semantics of those reviewed, in any case. Nor does it consider the differences in syntax and file structure between systems. A complete review is available for a nominal fee from Grant Ricketts at 7623 Leviston St., El Cerrito, CA 94530.

Ray Lauzzana has been a technical consultant in the computer graphics and image processing industry for over 15 years. He has recently taken a professorship with the University of Massachusetts, where he will be manager of its Computer Graphics Laboratory.

Grant Ricketts is a marketing and communications consultant to high-technology industries. His clients have included Grinnell Systems, Verbatim, Priam, and Microrim.

Operating System Capability Analysis

AT&T System V 2.0	DEC ULTRIX-11	Fortune FOR:PRO	HP-UX	M.W. Coherent	Microsoft DOS 2.0	Microsoft XENIX 3.0	Microware OS-9	MuiltiSolutions S1	UniSoft UniPLUS	VenturCom VENIX 1.0	WhiteSmith IDRIS	
2	3	5	3	1		4	1		3	2	3	**Macro Languages & User Front Ends** Total of 10 capabilities, including simplified half-shell and menu-driven shell. Representative capabilities include
•	•	•	•			•			•	•		csh (invokes C shell)
		•	•									menu (menu-driven Schmidt shell)
•		•	•			•			•			rsh (restricted shell)
	•	•	•	•		•			•	•	•	sh (Bourne shell command language)
2	3	2	3	3		1		1	2			**Tutorials** Total of 5 capabilities. Representative capabilities include:
•	•	•	•	•		•		•	•			help (help for system commands)
	•			•								learn (system tutorial)
8	2									5		**Graphics** Total of 12 capabilities, including: flow chart; graphic utility functions; pie chart, and scatter diagram. Representative capabilities include:
•												ged (graphics editor)
•	•									•		graph (draw line graph)
	•									•		plot (plot metafile)
9	9	5	9	3		7	3	1	6	6	3	**Editing & Word Processing** Total of 20 capabilities, including line-oriented editor. Representative capabilities include
•	•	•	•	•		•			•	•		ed (line-oriented text editor)
•	•	•	•			•			•	•		ex (primitive text editor)
•	•	•	•	•		•			•	•		sed (stream-oriented text editor)
•	•	•		•		•			•	•	•	spell (find spelling editors)
•	•	•	•	•		•			•	•		vi (screen-oriented text editor)
9	4	6	4	3		3	1		3	3	2	**Printing & Spooling** Total of 18 capabilities. Representative capabilities include:
	•	•	•	•		•			•	•	•	l pr (print spooler)
•	•	•	•	•		•			•	•	•	pr (print file)
										•		pscreen (dump screen to printer)

Numbers listed under the 12 operating systems indicate total number of capabilities within each of the 29 categories listed. Red is used to denote AT&T licensee systems, while blue identifies independent UNIX lookalikes.

AT&T System V 2.0	DEC ULTRIX-11	Fortune FOR:PRO	HP-UX	M.W. Coherent	Microsoft DOS 2.0	Microsoft XENIX 3.0	Microware 05-9	MultiSolutions S1	UniSoft UniPLUS	VenturCom VENIX 1.0	WhiteSmith IDRIS	
3	15	6	8	4		9			12	6	2	**Text Formatting & Type Setting**
•	•		•			•			•			Total of 25 capabilities, including typographical error analysis. Representative capabilities include
	•		•	•		•			•	•		cut (cut out piece of file)
	•	•	•			•			•			eqn (format math symbols)
	•		•			•			•			nroff (format file for line printer)
	•		•			•			•	•		paste (insert one file into another)
	•		•			•			•			tbl (set up formatting for tables)
	•		•			•			•			troff (format file for typesetting)
1	1	2	2		1	1		1	3		1	**Environmental Control**
•			•			•			•			Total of 8 capabilities, including redirect error messages. Representative capabilities include
	•	•							•			env (set up environment)
	•	•							•			printenv (report environment settings)
11	8	8	9	7	2	11	2	2	12	6	5	**Sorting & Comparing**
•	•	•	•	•		•			•	•	•	Total of 17 capabilities. Representative capabilities include
•	•	•	•	•		•			•	•	•	cmp (compare two files)
•	•	•	•	•		•			•	•	•	comm (select common lines from file)
•	•	•	•	•		•			•	•	•	diff (display difference between two files)
•	•	•	•	•		•		•	•	•	•	sort (sort file)
•	•	•	•	•		•			•	•	•	uniq (find duplicate lines)
6	5	4	6		1	6	1		6	5	1	**Searching**
•	•	•	•			•			•	•		Total of 8 capabilities, including search a file for a pattern. Representative capabilities include
•	•		•			•			•	•	•	find (find file in directory)
•	•		•						•	•		grep (search file for pattern)
												look (find lines in sorted list)
7	5	5	8	5		6		3	6	5	4	**Inter-User Communications**
•	•	•	•	•		•			•	•	•	Total of 13 capabilities, including enable/disable messaging and interactive user communication. Representative capabilities include
•	•	•	•	•		•			•	•		mail (send/receive letters)
•	•	•	•	•					•	•	•	wall (send message to all users)
												write (send message to specified user)
12	6	4	19			7		3	4	3	3	**Networking**
•	•	•	•			•			•	•	•	Total of 31 capabilities including network diagnostics; set up network configuration, and submit an RJE job. Representative capabilities include
•	•	•	•			•			•	•		cu (make call out of specified line)
•	•	•	•			•			•	•		uucp (copy files to/from remote systems)
												uux (remote program execution)
7	7	4	8	5		8		1	7	6	1	**Expression Evaluation & Calculation**
•	•	•	•	•		•			•	•		Total of 11 capabilities, including evaluate expression, desk calculator, and convert units of measure. Representative capabilities include
•	•	•	•	•		•			•	•		bc (arbitrary precision calculator)
•	•	•	•	•		•			•	•	•	expr (evaluate expression)
												test (evaluate logical expression)
13	13	9	12	7	1	9	4	5	13	11	3	**Programming Languages**
•	•		•	•		•			•	•	•	Total of 29 languages. Representative capabilities include
	•							•		•		as (assembly language)
•	•		•	•		•			•	•		basic (BASIC interpreter)
•	•	•	•			•			•	•		cc (C compiler)
•	•		•	•		•			•	•		f77 (FORTRAN 77 compiler)
												lex (lexical analyzer)
								•			•	pascal (Pascal compiler)
•	•	•	•	•		•			•	•		yacc (yet another compiler compiler)
5	3	5	6	3	1	6		1	5	4	3	**Debugging Tools**
•	•	•	•			•			•	•		Total of 19 capabilities, including symbolic debugger. Representative capabilities include
•	•	•	•	•		•			•	•		adb (core dump debugger)
•	•	•	•	•		•			•	•		nm (display symbol table)
•									•			prof (profile an execution)
												sdb (symbolic debugger)
8	12	10	9	6		12	3		12	8	2	**Software Support Tools**
•	•	•	•	•		•			•	•		Total of 16 capabilities, including generate error message file and find strings in object file. Representative capabilities include:
•	•	•	•	•		•			•	•		ld (link relocatable modules)
•	•	•		•		•			•	•	•	make (construct reconfigurable objects)
												time (return time for executing commands)
13	14	13	10			11			11			**Software Management**
•	•	•	•			•			•			Total of 15 capabilities, including retrieve an SCCS version. Representative capabilities include
•	•	•										admin (set up SCCS administration)
												vc (SCCS version control)
8	12	9	10	6	1	9	6		6	9	9	**Process Control**
•	•	•	•	•		•				•		Total of 30 capabilities, including suspend a process; halt system; and enable multiple use. Representative capabilities include:
•	•	•	•	•		•				•		at (invoke process at specified time)
•	•	•	•	•		•			•	•	•	cron (initialize time-based daemon)
•	•	•	•	•		•			•	•	•	kill (terminate process)
•	•	•	•	•		•			•	•	•	sleep (stall/delay process until alarm)
•	•	•	•	•		•			•	•	•	tee (open pipeline route)

Numbers listed under the 12 operating systems indicate total number of capabilities within each of the 29 categories listed. Red is used to denote AT&T licensee systems, while blue identifies independent UNIX lookalikes.

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9	8	8	14	6	1	11	5	4	9	6	9	**Data Conversion** Total of 34 capabilities, including Huffman encoding. Representative capabilities include: crypt (en/decrypt file) dd (copy and convert) join (relationally join files) tr (translate characters)
8	7	7	9	6	2	11	3	1	10	6	6	**File Examination** Total of 24 capabilities, including controlled viewing of a file. Representative capabilities include: cat (concatenate or type files) split (split file into parts) sum (count number of blocks in file) tail (display last lines of file) wc (count number of words in file)
8	8	8	8	7	4	8	3	5	8	7	3	**File Management** Total of 22 capabilities, including deleting file. Representative capabilities include: chmod (change file type) cp (copy one file to another) file (report file type) ln (link two files together) mv (rename file) rm (remove file)
12	3	1	1	3		8		1	1	2		**User Account Management** Total of 22 capabilities, including: report system usage; report disk usage; start up accounting; setup password aging and check password validity. Representative capabilities include: ac (start up accounting) quot (summarize file system owners)
9	10	8	9	7		9	1	3	8	7	4	**Security & Protection** Total of 20 capabilities, including: change owner and group of file; initialize user; and log into system
10	8	8	7	3	6	6	2	1	9	5	2	**Terminal Control** Total of 25 capabilities, including: clear screen; reset terminal; set up tab margins; and set terminal modes. Representative capabilities include: echo (echo string at terminal) stty (set up terminal configuration) tty (report name of current terminal)
3	2	3	3	1		4	3		1	1	3	**Device Management** Total of 13 capabilities, including: initialize device; send message to device; and set up device tables. Representative capabilities include: devnm (get device ID) mknod (make device mode)
6	5	5	7	6	9	13	5	1	8	8	5	**Directory Management** Total of 28 capabilities, including: copy file groups; list directory contents; and rename directory. Representative capabilities include: cd (change directories) ls (list directory contents) mkdir (make directory) pwd (report current directory) rmdir (remove directory)
11	9	12	6	6	1	7	1	1	4	4	6	**File System Maintenance** Total of 30 capabilities, including: configure system; set memory limits; and set swap limits. Representative capabilities include: fsck (check file system integrity) mkfs (make a file system) ncheck (check file system aliases)
5	6	7	6	7	9	6	3	2	6	6	5	**Disk Management** Total of 24 capabilities, including format disk. Representative capabilities include: df (report free disk space) du (summarize usage of disk) mount (mount disk or file system) tar (tar format tape or disk archive) umount (unmount disk or file system)
11	9	3	5	5	2	8	2	1	3	5	4	**Archiving & Backup Maintenance** Total of 21 capabilities, including: save files on floppy; recover file from backup; and copy file system. Representative capabilities include: ar (archive/library maintainer) dump (dump file system for backup) order (find order for library) ranlib (convert archive to random library) restore (restore file system from backup)
12	10	7	12	3		8	2	1	7	2	2	**System Status** Total of 27 capabilities, including report process status; report spooler status; report interprocess comm status; report status of remote job entry; and report who did what. Representative capabilities include ps (report process status) uustat (report status of uucp communication) who (report who is on system)
228	207	174	213	118	45	209	51	39	191	143	91	**SUMMARY** Total functions out of total of 577 capabilities

Numbers listed under the 12 operating systems indicate total number of capabilities within each of the 29 categories listed. Red is used to denote AT&T licensee systems, while blue identifies independent UNIX lookalikes.

Resolving Interrupt Conflicts

Lewis Perdue

As users stuff more and more expansion boards into their PC's, system crashes begin to occur so often that the motherboard becomes a veritable demolition derby of data. Keyboards freeze up, video displays look stricken with St. Elmo's fire, and the little loudspeaker sounds like it's signaling an imminent nuclear attack.

Usually these problems happen because of conflicts between hardware interrupt request channels (known as IRQ channels), or between Input/Output (I/O) port addresses, or they may happen because of memory conflicts.

Although these terms sound terribly technical (and the hexidecimal system used with the last two can be confusing) you don't need to understand everything about them to track down your system conflicts.

If you can recognize the differences among these three things and know the appropriate settings for each of the boards in your PC, you and your expansion board support departments can save hours — maybe days — in making peace among rebellious enhancement boards.

With that in mind, let's tackle the question of what these IRQsome things are and what they do.

If two boards are set to the same IRQ level and are active at the same time, the computer will generally lock up — requiring a cold boot.

These interrupt request channels are designated by IBM as IRQ2 through IRQ7 and are the actual physical connections used by an I/O board to signal the microprocessor that they need attention. They are prioritized within the system, with IRQ2 having the highest priority and IRQ7 the lowest.

Avoiding IRQ conflicts is what prompts much of the jumper setting and DIP-switch flipping you do when installing expansion boards.

In general (but not always since there are no real standards) IRQ channels are used in the following manner.

IRQ2 — Streaming tape drive controller, add-on hard disk controller, Microsoft bus mouse, IBM 3278/3278 mainframe communications board, Local Area Network adapter card.

IRQ3 — COM 2 serial port, IBM mainframe communications adapter boards, PC facsimile boards.

IRQ4 — COM 1 serial port

IRQ5 — LPT2 parallel port, internal hard disk in IBM PC/XT

IRQ6 — Floppy disk drive controller

IRQ7 — LPT1 parallel port

However, many expansion board manufacturers configure their boards to use IRQ channels which generally have been used for other devices. Since there are more kinds of expansion boards than there are IRQ channels, you must be careful to keep track of which channels are used in order to avoid conflicts.

If you cannot avoid a conflict between IRQ channels, you must make sure that only one of the conflicting devices can be activated at any given time. Otherwise, your PC will probably crash.

DATABASE MANAGEMENT SOFTWARE

PROGRAM	COMPUTER	DOS	MAX # RECS.	MAX # FIELDS	MAX # C.P.F.	NUMERIC DATA	CHAR. DATA	LOGIC. DATA	MATH ABIL.
PROFILE	I/II/III	TRSDOS	65,535	VARIOUS	VARIOUS	YES	YES	NO	NO
PROFILE 3+	I/III	TRSDOS	2,400+	99	254	YES	YES	YES	YES
PROFILE PLUS	II/12	TRSDOS	64,000	99	254	YES	YES	YES	YES
PROFILE 4+	4/4P	TRSDOS	65,535	99	255	YES	YES	YES	YES
MAXIMANAGER	I/II/III	TRSDOS	32,727	20	40	YES	YES	YES	YES
AIDS	I/III	TRSDOS							
SUPERLOG	I/III/4	TRSDOS	32,727						
FILEPRO	II/12/CPM	CPM	VARIOUS DEPENDING UPON TYPE MACHINE CAPACITY / SEE PROFILE ABOVE						
FILEPRO 16	16/6000	XENIX	SIMILAR TO PROFILE / FILEPRO BUT LARGER CAPACITY						
FILEPRO 16	IBM	MSDOS	SIMILAR TO PROFILE / FILEPRO BUT LARGER CAPACITY						
DBASE II	Z80	CPM	65,535	32	254	YES	YES	YES	YES
DBASE III	IBM	MSDOS				YES	YES	YES	YES
REFLEX	IBM	MSDOS							
RBASE 5000	IBM	MSDOS							
CLEARCUT	IBM	MSDOS							
PFS FILE	3/4/IBM	TR/MSDOS							
LITTLE BROTHER	4/4P	TRSDOS	32000						

4TH WED..MEETING..1987

JAN. DISK OPERATING SYSTEM-SYSTEMS

FEB. PROGRAMS TRANSFERING

MAR ELECTRICAL PROTECTION 110v

APL MODEM PROTICOLS

MAY UPGRADING YOUR COMPUTER

JUN COMPUTER PREVENTIVE MAINT.

JUL PRINTERS-PROBLEMS ECT.

AUG BASIC PROGRAMING

SEP COMPUTER LANGUAGES

OCT COMPUTER ACCESSORIES ECT.

NOV CLUB REVIEW 1987

DEC NEW PRODUCTS- REVIEW

THIS MEETING IS A ROUND TABLE DISCUSSION OF THE SUBJECT OF THAT MONTH.... COME AND HELP THE DISCUSSION WITH YOUR KNOWLEDGE OR YOUR PROBLEMS.....

MEETINGS:

2ND SAT.....:....1PM WORKSHOP [redacted].

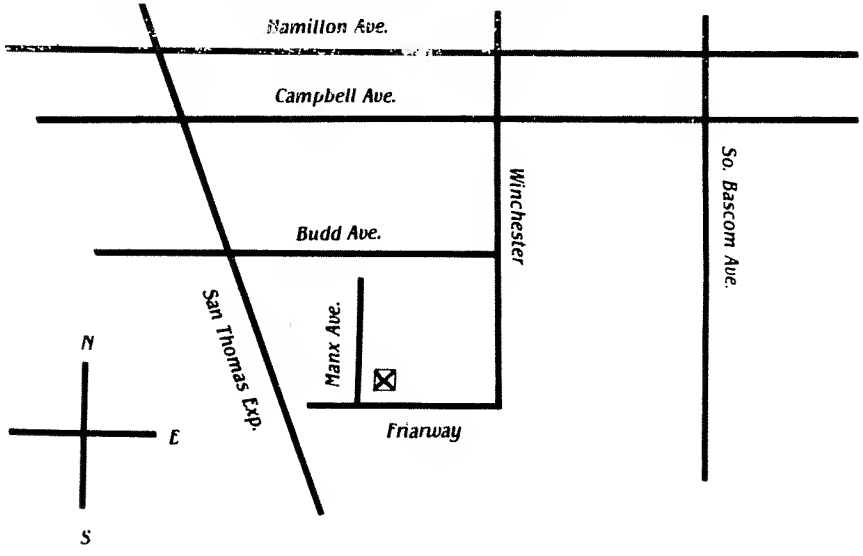
4TH WED.....7PM LECTURE [redacted].

NOTES:

1. MEMBERSHIP REQUIRED
2. GUESTS..BY APPOINTMENT ONLY

INFORMATION...CALL 408-379-2774

B.B.S.....CALL 408-374-3974



This club has been established to provide its members total computer knowledge using "hands-on" application during the meetings. For better understanding of existing hardware and software in an informal—social club atmosphere.

We hope to provide members close contact between novice and amateur home computer entusiasts; young and old, male and female, school, home, business and hobbiest.

Byte Bandits of Amer.
TRS-80's Computer Club
180 Mertz Ave.
Campbell, CA 95008